REMARKS

The present application was filed on June 9, 2000 with claims 1-34. Claims 1-34 are currently pending in the application. Claims 1, 22 and 28 are the independent claims.

Reconsideration of the present application is respectfully requested in view of the above amendments and the following remarks.

The specification, abstract, and dependent claim 20 have been amended in a manner that is believed to overcome the associated objections raised by the Examiner. Dependent claim 30 has also been amended, for consistency with dependent claims 3 and 24.

With regard to the objection to the drawings, Applicants respectfully decline to implement the suggestions made by the Examiner. Although the Examiner has indicated a preference for certain changes in the drawings, Applicants believe that the drawings as filed are sufficiently clear. For example, the objected-to abbreviation NI in FIGS. 1 and 2 is clearly defined at page 5, line 7 of the specification. Also, it is not inappropriate for Applicants to utilize as a shorthand notation the term "set {a, b, c}" in FIG. 4 of the drawings rather than "set of nodes {a, b, c}." As to the flow diagram of FIG. 5 and its associated text, the current flow diagram format is the one which Applicants have chosen to use in describing their invention, and said format is believed to satisfy all statutory and regulatory requirements.

Formal drawings are submitted herewith. It is believed that the formal drawings are fully compliant with 37 C.F.R. §1.84, and approval and entry of the formal drawings is respectfully requested.

Claims 1-4, 10, 21-25, 28-31 and 34 stand rejected under 35 U.S.C. §102(b) as being anticipated by S. Kaxiras, "Identification and Optimization of Sharing Patterns for Scalable Shared-Memory Multiprocessors" Ph.D. Thesis, Computer Sciences, University of Wisconsin-Madison, 1998 (hereinafter "Kaxiras"), which was cited by Applicants on their Information Disclosure Statement filed concurrently with the present application. Applicants note that the author S. Kaxiras of this primary reference and inventor Stefanos Kaxiras named on the present application are one and the same person.

Applicants respectfully traverse the §102(b) rejection on the ground that the Examiner has failed to establish anticipation of at least independent claims 1, 22 and 28 by the Kaxiras reference.

The Manual of Patent Examining Procedure (MPEP), Eight Edition, August 2001, §2131, specifies that a given claim is anticipated "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," citing Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, MPEP §2131 indicates that the cited reference must show the "identical invention . . . in as complete detail as is contained in the . . . claim," citing Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The present invention as set forth in claim 1 is directed to a method of determining a set of predicted readers of a data block in a multiprocessor system. The method includes the steps of determining a current set of readers of a data block which is subject to a write request, and generating the set of predicted readers based on the current set of readers and at least one additional set of readers representative of at least a portion of a global history of a directory associated with the data block.

It is particularly important to note that the claimed arrangements utilize a global history of a directory. This aspect of the invention is described in the following manner at page 6, lines 18-26 of the specification, with emphasis supplied:

> The present invention in an illustrative embodiment provides a directory-based prediction mechanism which predicts the next set of readers of a block when a write request goes from the writer to the directory associated with the block. The mechanism predicts a likely set of readers of the value produced by the writer, and after the writer has finished writing, this prediction is used to forward the data to all the predicted readers. Unlike conventional predictors which distinguish among blocks or among instructions to keep separate histories for blocks in the system, the prediction mechanism of the present invention merges together multiple sets of readers for multiple blocks served by the directory. This information is referred to herein as the global history of the directory.

Additional description relating to the global history of a directory is provided at, for example, page 10, lines 19-25 of the specification.

Applicants respectfully submit that Kaxiras fails to teach or suggest the claimed prediction arrangements involving use of a global history of a directory associated with a data block, and thus fails to provide the associated advantages of the type described at page 4, lines 5-7 of the specification.

The Examiner in formulating the §102(b) rejection of claim 1 over Kaxiras relies on the discussion at pages 206-207 thereof, and more particularly relies on the intersection-prediction approach described at page 207, section 2. This intersection-prediction approach is described in Kaxiras as follows:

> The predictor is updated when the producer invalidates a sharing list and the identities of the consumers are collected on a temporary bit-map. The logical AND of the temporary bit-map and the predictor entry bit-map (that contains the consumers of the previous store-miss or store-write-fault) constitutes the prediction bit-map. After the prediction bit-map is calculated, the temporary bit-map is installed over the predictor entry's bit-map.

There is no mention whatsoever in this description regarding the claimed utilization of a global history of a directory associated with a data block. In fact, it appears that the cited passage is more properly viewed as simply an example of one of the "conventional predictors" referred to in the previously-quoted description from page 6, lines 18-26 of the specification. The other portions of Kaxiras relied upon by the Examiner similarly fail to teach or suggest the claimed utilization of a global history of a directory.

Claim 1 therefore includes limitations which are not taught or suggested by Kaxiras. The anticipation rejection of claim 1 is thus believed to be improper and should be withdrawn.

Independent claims 22 and 28 are not anticipated by Kaxiras for reasons similar to those identified above with regard to claim 1.

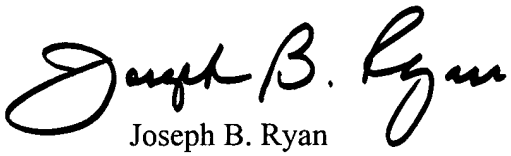
Dependent claims 2-4, 10, 21, 23-25, 28-31 and 34 are believed allowable for at least the reasons identified above with regard to independent claim 1, and these claims are also believed to specify additional separately-patentable subject matter over Kaxiras and the other art of record.

Claims 5-7, 11-20, 26, 27, 32 and 33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kaxiras, and claims 8 and 9 stand rejected under §103(a) as being unpatentable over Kaxiras in view of U.S. Patent No. 6,032,228 (hereinafter "Islam").

These dependent claims are allowable for at least the reasons identified above with regard to their respective independent claims, and are believed to specify additional separately-patentable subject matter over Kaxiras and the other art of record. The Islam reference fails to supplement the fundamental deficiencies of Kaxiras as applied to the independent claims, in that it fails to provide any teaching or suggestion regarding the claimed utilization of a global history of a directory.

In view of the above, Applicants believe that claims 1-34 are in condition for allowance, and respectfully request the withdrawal of the §102(b) and §103(a) rejections.

Respectfully submitted,



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